Berryessa Creek Element
Coyote and Berryessa Creeks
Flood Control Project
Santa Clara County, California

Appendix A: Environmental

Part I

Wetland Delineation Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:

APR 26 2005

RECEIVED
APR 27 2005

Mr. Mark C. Charlton
Chief, Planning Division
Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95825-2922

Dear Mr. Charlton:

Enclosed is the Fish and Wildlife Service's draft Wetland Delineation Report for the General Re-evaluation of Flood Control Needs along Berryessa Creek. We are providing this report for the Corps of Engineers' (Corps) review and comment prior to transmittal of the final report.

If you have any questions regarding the draft report please contact either Mark Littlefield or Doug Weinrich at (916) 414-6600.

Sincerely,

David L. Harlow
Acting Field Supervisor

cc:
David Bauman, COE, Sacramento, California

Wetland Delineation Report
for
Santa Clara Valley Water District
and
U.S. Army Corps of Engineers
General Re-Evaluation of Flood Control Needs
Along Berryessa Creek

Prepared for:
U.S. Army Corps of Engineers
Sacramento District

Prepared by:
U.S. Department of the Interior
Fish and Wildlife Service
Sacramento Fish and Wildlife Office

April 2005

Introduction

The U.S. Army Corps of Engineers (Corps) regulates impacts to waters of the United States under the jurisdictional authority of section 404 of the Clean Water Act (33 U.S.C. 404 et seq.). Jurisdictional waters of the United States include all navigable waters, interstate waters, their tributaries, and adjacent wetlands (Environmental Laboratory 1987; Federal Register 1986).

The purpose of this report is to describe the extent and type of jurisdictional wetlands and other waters of the United States present within the proposed project site that fall under the jurisdiction of section 404 of the Clean Water Act. Accordingly, this report addresses all identified potential jurisdictional waters of the United States, including wetlands, for the general re-evaluation of flood control needs along Berryessa Creek (project), located in the cities of Milpitas and San Jose, Santa Clara County, California. Appendix 1 provides project vicinity and location maps. This report is based on information gathered in the field, the *1987 U.S. Army Corps of Engineers (Corps) Wetland Delineation Manual*, and Federal regulations governing wetland areas.

Definitions and Criteria

Wetlands. For regulatory purposes, wetlands are a subgroup of waters of the United States defined as areas that are inundated, or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3; 40 CFR 230.3).

Waters of the United States. As used in this report, this term refers to unvegetated waterways and water bodies with a defined bed and bank and an ordinary high water mark, such as drainages, creeks, rivers and lakes. Waters of the United States typically lack hydrophytic vegetation and may also lack hydric soils.

Other Waters of the United States. As used in this report, this term refers to vegetated waterways and water bodies with a defined bed and bank and an ordinary high water mark, such as vegetated swales, drainages, creeks. Other waters of the United States typically contain hydrophytic vegetation and hydric soils, and as such are wetlands in addition to being waters of the United States.

Summary of Findings

The project area supports areas of non-jurisdictional uplands, about 8 acres of waters of the United States and about 0.79 acre of other waters of the United States. Other waters of the United States include limited areas of freshwater marsh typically located at or below the ordinary high water line and within boundaries of the stream channel. Waters of the United States includes all portions of Berryessa Creek within the project boundary, at or below the ordinary high water line. Upland areas include areas lacking indicators of wetland vegetation and/or hydrology, such as riparian woodlands, annual grasslands, levee and/or maintenance roads, and disturbed areas.

Project Area and Description
Berryesa Creek is located in the south San Francisco Bay Area of California, in Santa Clara County and is a tributary to Lower Penitencia Creek and Coyote Creek, which ultimately flow into the southern end of San Francisco Bay. Berryessa Creek watershed is about 22 square miles, draining the east side of Santa Clara Valley. Appendix 1 provides a project vicinity and location maps.

The headwaters of Berryessa Creek are located in the Los Buellis Hills of the Diablo Range. Once the creek leaves the foothills of the Diablo Range, it flows through the cities of San Jose and Milpitas, California, eventually making its way to San Francisco Bay. Previous flood control efforts and adjacent development have significantly altered Berryessa Creek. Levees and concrete-lined portions of the stream channel have resulted in significant modification and channelization. Portions of the creek flow through culverts and gradient is controlled by several engineered drop structures. Berryessa Creek is identified as an intermittent blue line water on the U.S. Geological Survey topographic map for the area. Berryessa Creek flows throughout its length during the rainy season, especially after heavy rainfalls. Portions of the creek may retain water throughout the year as a result of summer runoff from urban areas ("nuisance water").

The project area is subject to intense residential and commercial development. The project area encompasses a 4.5 mile length of Berryessa Creek, beginning at Old Piedmont Road and ending about 50 feet downstream of Calaveras Boulevard.

Methodology
Determination and delineation of wetlands and waters of the United States within the proposed project site was based on the delineation process for routine determinations as described in the *1987 U.S. Army Corps of Engineers Wetland Delineation Manual.*

The objective of the assessment was to gather information on the vegetation, soils, and hydrologic conditions of the project site and then determine the total acreage of areas potentially subject to the Corps' jurisdiction. Plant species were identified based on Reed (1988) and Hickman (1993) and then recorded as hydrophytic or upland based on classifications by Reed (1988). Soil colors were determined based on the Munsell soil color chart 1992. Soil taxonomy and drainage characteristics were determined based on the U.S. Department of Agriculture, Soil Conservation Service soil survey for Santa Clara County, California, completed in June 1958.

Field investigation procedures for the delineation were conducted on January 25-26, 2005, by U.S. Fish and Wildlife Service staff (see Appendix 2 for list of delineators and preparers). Data forms for each site are included in this report as Appendix 3.

Vegetation
The vegetation along the entire site was examined for the presence of wetland indicator species as listed in the *National List of Plant Species that Occur in Wetlands: California (Region 0).* When more than 50 percent of the dominant species in a plant community

have an indicator status of obligate wetland, faculative wetland, and/or facultative, hydrophytic vegetation is determined to be present. A total of nine locations within the project site were closely examined during the assessment to identify and determine the plant species present and their composition. See Appendix 4 for a list of species common to the project site.

Hydrology

The entire length of Berryessa Creek within the project site was assessed for the presence of wetland hydrology. The term "wetland hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Indicators of wetland hydrology may include, but are not limited to:

- Drift lines
- Sediment deposition
- Watermarks
- Historic records and
- Visual observations of saturated soils and/or inundation

Soils

Hydric soils require long periods (hundreds of years) for development of wetland soil characteristics, and most man-induced wetlands have not been in existence for a sufficiently long enough period to allow for their development. Because the likelihood of hydric soils being present within the constructed channel was minimal, standard soil profile test pits were not dug. Soil data was gathered along the length of the project site by the use of a soil probe/core. Soil color was noted at two locations where there was the presence of wetland hydrology and hydrophitic vegetation. Soils maps for the Santa Clara area were developed by the U.S. Department of Agriculture, Soil Conservation Service in June 1958. This soil survey and its attendant maps were reviewed prior to field visits.

Soil types in the project area include Mocho gravelly loam (1-3 percent slopes), Mocho loam (1-3 percent slopes), Mocho clay loam (1-3 percent slopes), Sunnyvale clay loam (0-1 percent slope), Orestimba silty clay loam (0-1 percent slope), and Clear Lake clay (adobe) (0-1 percent slope).

Conclusions

The project site contains waters of the United States and other waters of the United States. Other waters of the United States within the project site are characterized as riverine semipermanently flooded freshwater marsh. Natural flooding in the area occurs due to storm events during the winter months and runoff from urban areas during the summer months.

Other waters of the United States in the project area are dominated by cattail, an obligate wetland plant species as defined by the *National List of Plant Species that Occur in Wetlands: California (Region 0).* Also common are watercress, horsetail, and

smartweed. The extent of area dominated by hydric vegetation within the project site appears to vary from year to year. This conclusion is based on review of aerial photography of the site and observations of weed control and maintenance within the flood control channel.

Soil in other waters of the United States was clayey with a Munsell moist color of very dark gray to black (2.5 Y 3-2/0). Soils in the project area as identified by the 1958 soil survey are not hyrdric. It should be noted that due to the age and mapping order of the soil survey, inclusions of other minor soil types would not have been routinely listed. Areas of freshwater marsh are atypical because the channel they are found in is man made, and the soils present are a result of recent deposition and sedimentation.

As previously noted within the project site, other waters of the United States are found at or below the ordinary high water line. This is appears to be a result of the steep cross-section of the channel (trapezoidal) and the nature of the parent soil material exposed on the channel sides which limits growth of hydrophitic vegetation. Other waters of the United States are noted on Map # 7 as BW-1 and on Map #6 as BW-2. BW-1 totals about 0.40 acre and BW-2 totals about 0.39 acre. These two sites total about 0.79 acre. Field data sheets recording the vegetation, soils, and hydrology at each plot are attached as Appendix 3.

As tributary to a navigable water of the United States (San Francisco Bay) the area of Berryessa Creek at or below the ordinary high water line is a water of the United States. Waters of the United States were mapped for this report based on both the field investigation and photo interpretation. The project site contains about 7.9 acres of waters of the United States. A portion of Berryessa Creek from I-680 to about 600 feet upstream of Morrill Ave is contained within a concrete lined channel (see Map #3 and 4; BW-5). This portion of Berryessa Creek was not surveyed in the field, but contains about 1.86 acres of waters of the United States. Appendix 5 contains photos of selected reaches of Berryessa Creek.

The following table summarizes jurisdictional waters of the United States and wetland types and acreages found within the project site.

Jurisdiction Type	Survey ID	Acres	Total Acres
Waters of the United States	BW-3	2.207	8.031
	BW-4	2.699	
	BW-5	1.865	
	BW-6	1.260	
Other Waters of the United States[1]	BW-1	0.403	0.792
	BW-2	0.389	

[1] Areas identified as "other waters of the U.S" are also "waters of the U.S.," but are separated in this table as they also have wetland features such as hydrophytic vegetation and/or indicators of hydric soils in addition to a hydrologic connection to a navigable waterway.

References

Environmental Laboratory, Department of the Army. 1987 "Corps of Engineers Wetland Delineation Manual" (Technical Report Y-87-1). U.S. Army Corps of Engineers. Waterways Experimental Station. Vicksburg, Mississippi. 100 pp. + Appendices.

Hickman, James C., ed. 1993. The Jepson Manual, Higher Plants of California. University of California Press. Berkeley, California. 1400 pp.

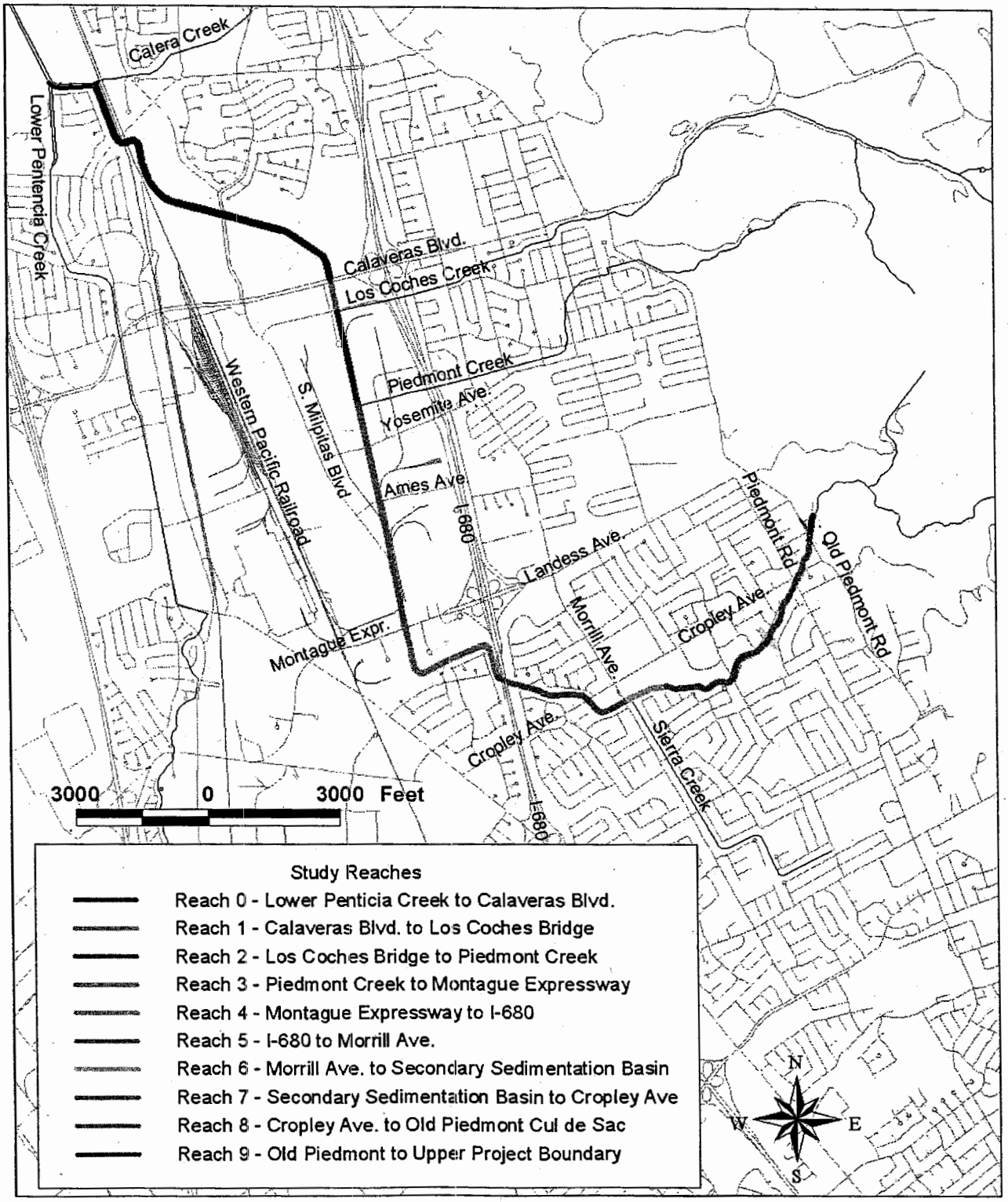
Munsell. 1992. Soil Color Charts. Kollmorgen Instruments Corporation. Newburg, New York.

Reed, P.B., Jr. 1988. National list of plant species that occur in wetlands: California (Region 0). U.S. Fish and Wildlife Service Biol. Rep. 88(26.10) 135 pp.

United States Department of Agriculture, Soil Conservation Service, June 1958. Soil Survey for Santa Clara County, California.

Appendix 1
Project Area Maps


ALAMEDA CO
SANTA CLARA CO
SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE
SALT EVAPORATORS
Warm Springs District
Drawbridge
Palo Alto Yacht Harbor County Park
Fremont Airport
Milpitas
Alviso
Sunnyvale Baylands Pk
AMES RESEARCH CENTER
NAVAL AIR STATION
Moffett Field
Sunnyvale
Mountain View
Great America
Agnews State Hospital
Youth Science Institute
Alum Rock
Calaveras Valley
Poverty Ridge
Los Buellis Hills
Ed Levin County Park
Triton Museum of Art
Santa Clara
SAN JOSE
San Jose International Airport
San Jose Museum of Art
Japanese Friendship Tea Gardens
San Jose Historical Museum
Cupertino
Monta Vista
Campbell
Willow Glen
Evergreen
Saratoga
Hakone Gardens
Villa Montalvo Arboretum
Montalvo Center for the Arts
El Sereno
Monte Sereno
Billy Jones Wildcat Railroad
Los Gatos
Cambrian Park
Alamitos
Santa Teresa Hills
Santa Teresa County Park
Coyote Pk
Tulare Hill
Skyline-to-the Sea Trail
Sam Boni Skyline Co Park
Villa Montalvo Arboretum Co Park
Grizzly Rock
Lexington Reservoir
Lexington Res Water Rec Area
Guadalupe College
Guadalupe Reservoir
ALMADEN QUICKSILVER COUNTY PARK
New Almaden Mine
New Almaden
Calero Reservoir Water Rec Area
Almaden Reservoir
Bald Peaks
Mt Umunhum
Mt Thayer
El Sombroso
SIERRA AZUL
LOMA
Twin Creeks
Aldercroft Heights
Redwood Estates
Holy City
White Rock
SANTA CRUZ
SANTA CLARA CO
SANTA CRUZ CO
Canada Garcia
Stevens Creek County Park
Stevens Creek Reservoir
SAN ANDREAS RIFT ZONE
101
237
280
680
880
85
87
17
82
130
9
35
G2
G4
G5
G6
G8
G10

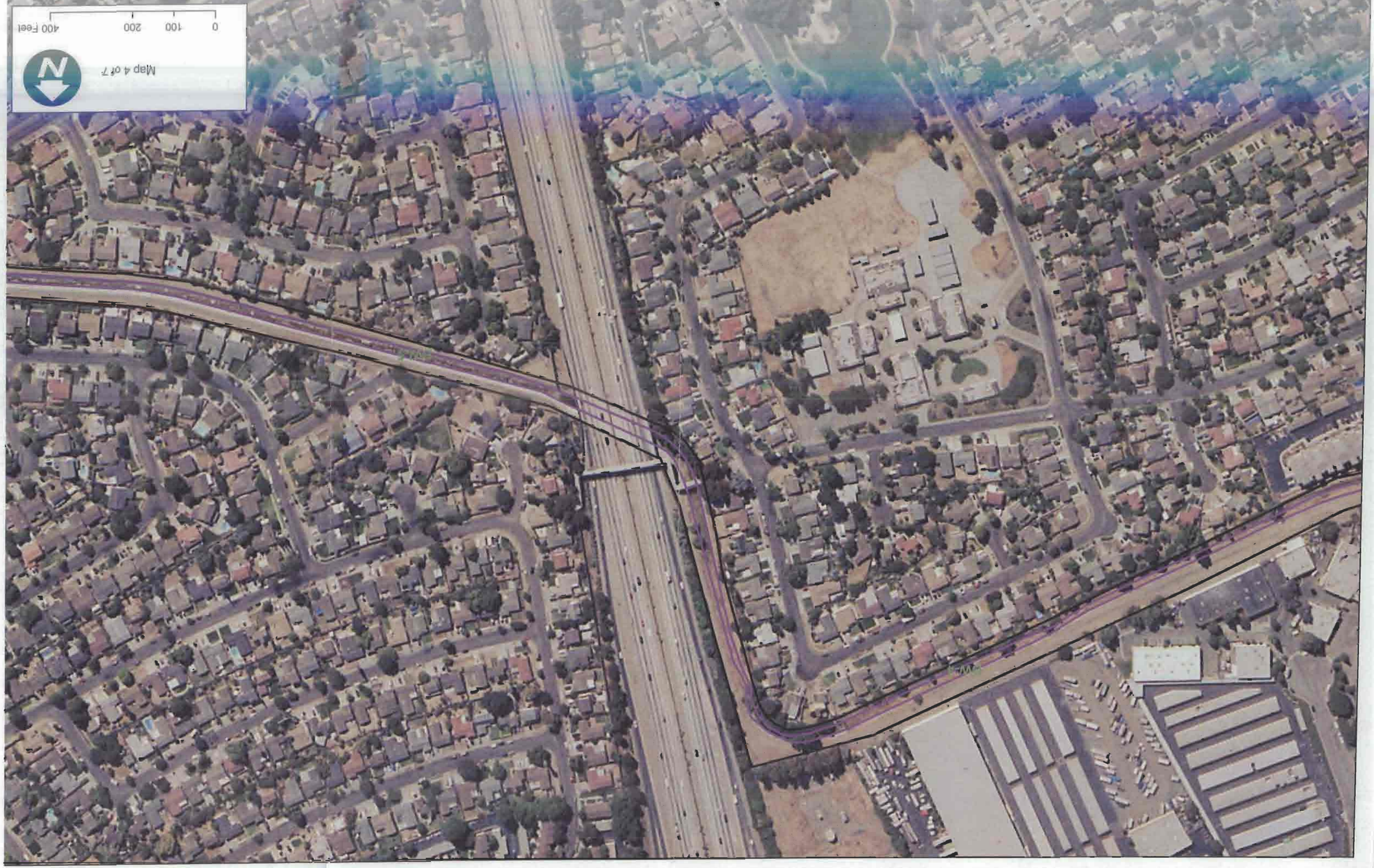

Calera Creek
Lower Penitencia Creek
Calaveras Blvd.
Los Coches Creek
Piedmont Creek
Yosemite Ave.
Ames Ave.
Western Pacific Railroad
S. Milpitas Blvd.
I-680
Landess Ave.
Montague Expr.
Morrill Ave.
Cropley Ave.
Piedmont Rd.
Old Piedmont Rd.
Sierra Creek
3000 0 3000 Feet
Study Reaches
Reach 0 - Lower Penticia Creek to Calaveras Blvd.
Reach 1 - Calaveras Blvd. to Los Coches Bridge
Reach 2 - Los Coches Bridge to Piedmont Creek
Reach 3 - Piedmont Creek to Montague Expressway
Reach 4 - Montague Expressway to I-680
Reach 5 - I-680 to Morrill Ave.
Reach 6 - Morrill Ave. to Secondary Sedimentation Basin
Reach 7 - Secondary Sedimentation Basin to Cropley Ave
Reach 8 - Cropley Ave. to Old Piedmont Cul de Sac
Reach 9 - Old Piedmont to Upper Project Boundary
N
W
E
S

Beryessa Creek Flood Control Needs Reassessment


0
100
200
400 Feet
Map 1 of 7

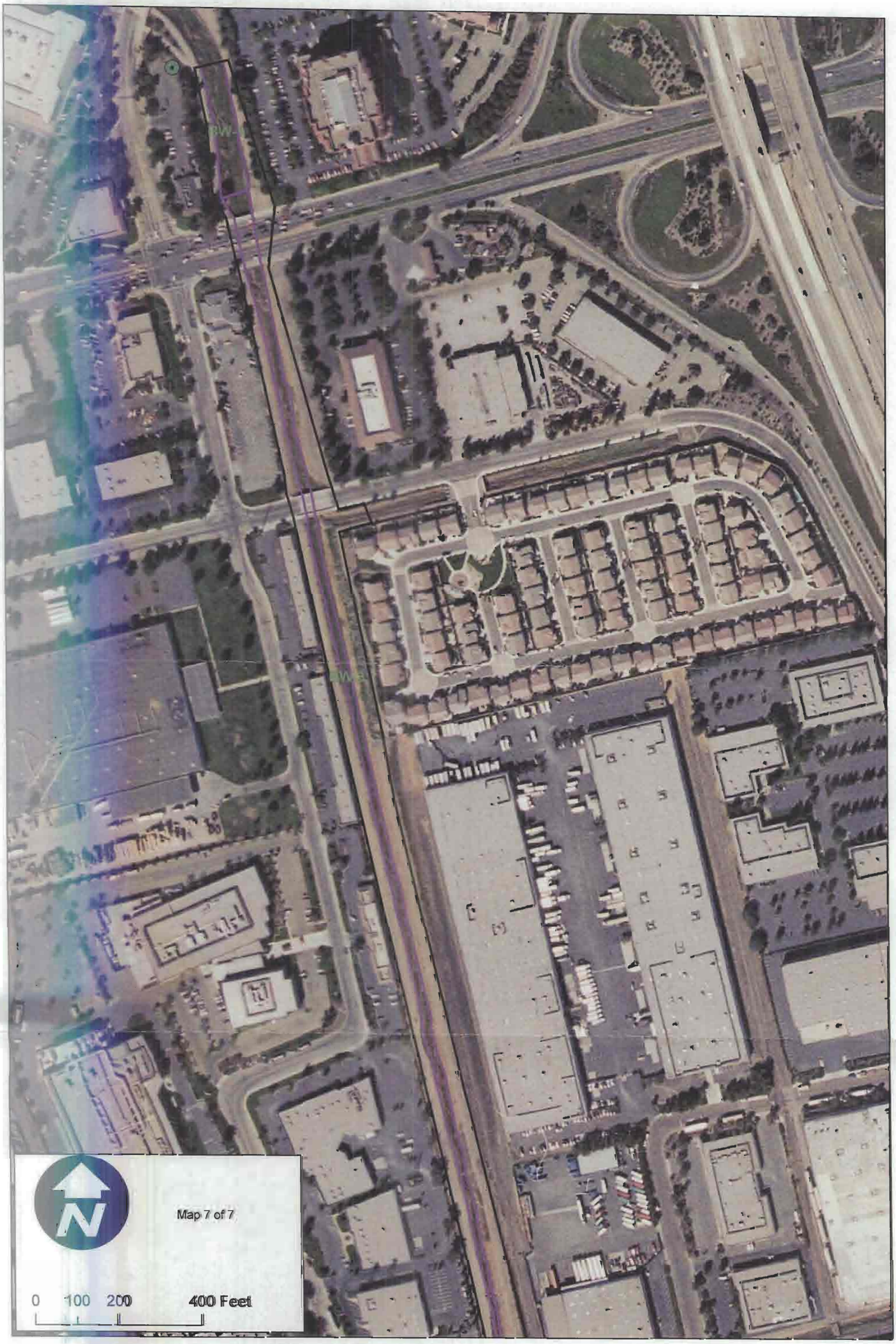

0
100
200
400 Feet
Map 2 of 7


0
100
200
400 Feet
N
Map 3 of 7


0
100
200
400 Feet
Map 4 of 7


N
Map 5 of 7
0 100 200 400 Feet


N
Map 6 of 7
0 100 200 400 Feet


N
Map 7 of 7
0 100 200 400 Feet

Appendix 2
Names of Delineators and Preparers

Delineators

Mark Littlefield, U.S. Fish and Wildlife Service
Stephanie Rickabaugh, U.S. Fish and Wildlife Service

Preparers

Mark Littlefield, U.S. Fish and Wildlife Service

Appendix 3
Data Forms

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berrygessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/26/05 Plot No.: BW-1 Section: _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1. ———		7. Cattail	OBL
2.		8. Bedstraw	FACW
3.		9. Watercress	OBL
Saplings/shrubs		Woody vines	
4. ———		10. ———	
5.		11.	
6.		12.	

(See attached sheet for Full List)

% of species that are OBL, FACW, and/or FAC: ____. Other indicators: _____.

Hydrophytic vegetation: Yes X No ____. Basis: Wetland species were dominant in both % cover and % presence.

Soil

(% soil series symbols)

Series and phase: Orestimba Orestimba S.I. Clay Loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: 2.5Y 2/0 moist

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes X No ____; Basis: Cvorna Less than 1 soil type can have inclusions of wetland soil types.

Hydrology

Inundated: Yes X; No ____. Depth of standing water: 12" average

Saturated soils: Yes X; No ____. Depth to saturated soil: 0 - 5 standing water

Other indicators: Trash line and high water mark.

Wetland hydrology: Yes X; No ____. Basis: _____.

Atypical situation: Yes X; No ____.

Normal Circumstances? Yes ____ No X.

Wetland Determination: Wetland Site is a wetland Nonwetland _____.

Comments: wetland boundary is ordinary high water line of Channel

Determined by: Mark A. Stofan

from Bridge to Bridge.

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name:_____

Location:_____ Plot #: 9 Date:_____ Determined By:_____

VEGETATION LAYER

TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HERBS *	MIDPOINT OF % COVER CLASS	RANK
1 Smartweed ob	29% Bedstraw obl	FACW
2 watercress 1% obl	3% obl 7% Ranuncu-las	OBL
3 Cat-tail)		
4 poison hemlock FACW	geranium FACU	
5 mustard, upl	1% horsetail (little) FAC	
6 vetch FACU	Rip-gut brom upl	
7 chickweed FACU		
8 Yarrow FACU		
9 wildoats upl		
10 dandaline upl		
Trifolia - Clover FAC		

SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1 Palm			
2			
3			
4			
5			
6			
7			
8			
9			
10			

WOODY VINES	NUMBER OF STEMS	RANK
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

8/16

* 60% grasses, tame,

DATA FORM 3

ATYPICAL SITUATIONS

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

Location: Santa Clara CA Plot Number: 9 Date: 1/26/05

A. VEGETATION:

1. Type of Alteration: Aerial Sprayed to remove woody vegetation.

2. Effect on Vegetation: _____.

3. Previous Vegetation: unknown

(Attach documentation) _____.

4. Hydrophytic Vegetation? Yes X No _____.

B. SOILS:

1. Type of Alteration: Channel is constructed within a barged upland soil type — _____.

2. Effect on Soils: wetland soils are new and lack development due to created channel and likely dredging (maintenance)

3. Previous Soils: upland

(Attach documentation) _____.

4. Hydric Soils? Yes X No _____.

C. HYDROLOGY:

1. Type of Alteration: Constructed trapizodial Channel _____.

2. Effect on Hydrology: _____.

3. Previous Hydrology: _____

(Attach documentation) _____.

4. Wetland Hydrology? Yes X No _____.

Characterized By: [signature]

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/26/05 Plot No.: ~~BW-3~~ BW-2 Section: _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status	
Trees		**Herbs**		
1. —		7. wild oats	upl	See data sheet for full list and percentages of each species.
2.		8. mustard	upl	
3.		9. Cattail	obl	
Saplings/shrubs		**Woody vines**		
4. willows (sprayed + Dead)		10. —		
5.		11.		
6.		12.		

% of species that are OBL, FACW, and/or FAC: 60%. Other indicators: _____.

Hydrophytic vegetation: Yes X No ____. Basis: % of plant species present which have Hydrophytic.

Soil

09 soil symbol

Series and phase: Orestimba Silty Clay Loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: 2.5Y 0.2 (moist)

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes X No ____; Basis: Chroma of less than 1 soil type can have inclusions / not normal conditions —

Hydrology

Inundated: Yes X; No ____. Depth of standing water: 9" average.

Saturated soils: Yes X; No ____. Depth to saturated soil: 0.

Other indicators: high water line / wrack.

Wetland hydrology: Yes X; No ____. Basis: _____.

Atypical situation: Yes X; No ____.

Normal Circumstances? Yes X No ____.

Wetland Determination: Wetland site is wetland; Nonwetland _____.

Comments: Site is a wetland occuring at or below ordinary high water line of this channel —

Determined by: Mark A. Jonathan

B2

Boundary of this site is between points 7 and 8 within the defined channel.

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name:_____

Location:_____ Plot #: 7 Date:_____ Determined By:_____

VEGETATION LAYER

TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HERBS	MIDPOINT OF % COVER CLASS	RANK
1 cat tail	5%	OBL ✓
2 Wild Oats		upl
3 mustard		upl
4 Rumex crispus	<1%	FACW ✓
5 purple vetch		FACU
6 Bed Straw		FACW ✓
7 Basin Wild Rye		upl
8 Watercress	<1%	OBL ✓
9 Horsetail	2%	OBL ✓
10		

SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1 Palm tree	1 (small < 12" tree)		?
2 Willow - (dead from spraying?)			OBL ✓
3			
4			
5			
6			
7			
8			
9			
10			

WOODY VINES	NUMBER OF STEMS	RANK
1		
2		
3		6/10
4		
5		
6		
7		
8		
9		
10		

DATA FORM 3

ATYPICAL SITUATIONS

Applicant Name: _____ Application Number: _____ Project Name: Berrygessa Creek

Location: Santa Clara, CA Plot Number: 7/8 Date: 1/26/05

A. VEGETATION:

1. Type of Alteration: area sprayed to control Woody Shrubs, Site may also be mowed.

2. Effect on Vegetation: minimal vegetation / Ruderal.

3. Previous Vegetation: unknown

(Attach documentation) _____

4. Hydrophytic Vegetation? Yes X No _____.

B. SOILS:

1. Type of Alteration: ¾ channel is constructed on upland soil types Channel is Trapezoidal cutting to parent

2. Effect on Soils: materials

3. Previous Soils: _____

(Attach documentation) _____

4. Hydric Soils? Yes _____ No X.

C. HYDROLOGY:

1. Type of Alteration: Channel is constricted to constructed feature - no flood plain or adjacent wetlands.

2. Effect on Hydrology: _____

3. Previous Hydrology: _____

(Attach documentation) _____

4. Wetland Hydrology? Yes X No _____.

Characterized By: Mark A. Sinclair

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: ________ Application Number: ________ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: ~~#~~ BW-6 Section: ________

Transect 1

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1. Pacific Willow (Salix lasiandra)	OBL	7. see Data Form	
2. Coastal Live oak	upL	8.	
3. Elderberry (Sambucus	FAC	9.	
Saplings/shrubs		Woody vines	
4.		10.	
5. see data Form		11. see data Form	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 37% Other indicators: ________.

Hydrophytic vegetation: Yes ____ No ____. Basis: ________.

Soil

Series and phase: Mocho gravelly Loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: ________; Matrix color: ________.

Gleyed: Yes ____ No X Other indicators: ________.

Hydric soils: Yes ____ No X; Basis: not on hydric soils list, no indicators.

Channel bottom gravelly / cobble

Could not soil sample here

Hydrology

Inundated: Yes X; No ____. Depth of standing water: 6"

Saturated soils: Yes X; No ____. Depth to saturated soil: 0

Other indicators: ________.

Wetland hydrology: Yes X; No ____. Basis: water present and flowing. on site

Atypical situation: Yes ____; No X.

Normal Circumstances? Yes X No ____.

Wetland Determination: Wetland ________; Nonwetland non wetland

Comments: site is partially vegetated stream channel with seasonal flows. Site is water of the U.S.

Determined by: [signature]

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name: Berryessa Ck

Location:_____ Plot #: 1 Date: 1/25/05 Determined By:_____

VEGETATION LAYER

	TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1	Willow Pacific	12"	Salix lasiandra	OBL ✓
2	Oak Cal coastal	"	Quercus	UPL
3	Elderberry	6"	Sambucus Mexicana	Fac ✓
4				
5				
6				
7				
8				
9				
10				

	HERBS	MIDPOINT OF % COVER CLASS	RANK
1	Dock - Curly Rumex Crispus		Facw ✓
2	Carex Carex Spp		Fac ✓
3	Wild oats		upl
4	Rip gut brome Hordeum Jubatum		upl
5	*Licorice Foeniculum Vulgare		FAC+ ✓
6	Vetch Vicia Americana		FACU FAC ✓
7	Cal Poppy		
8	Mustard Sisymbrium altissimum		FAC U
9	Fern (unid)		
10			

	SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1	bird's foot sage			
2	pyracantha			
3	baccharis Baccharis spp.			FAC ✓
4	Eucalyptus			
5				
6				
7				
8				
9				
10				

	WOODY VINES	NUMBER OF STEMS	RANK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Comment:
Incised channel w/ water
Pool and Riffle
Gravely Substrait Non-
Wetland soils
Bank full width ~ 12'

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: ____________ Application Number: ____________ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: ~~2~~ BW6 Section: ____________

Transect 2

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Sycamore	Fac w	7. Wild Oats	upL
2. California Buckeye	upL	8. Rip-gut brome	upL
3. California Live Oak	upL	9. Oxalis	Fac
Saplings/shrubs		**Woody vines**	
4. ~~[illegible]~~		10.	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 38% Other indicators: ________.

Hydrophytic vegetation: Yes ____ No X. Basis: % of wetland vegetation.

Soil Symbol Mm

Soil

Series and phase: Mocho gravelly loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: ________; Matrix color: ________.

Gleyed: Yes ____ No X Other indicators: ________________.

Hydric soils: Yes ____ No X; Basis: ________________.

Hydrology

Inundated: Yes X; No ____. Depth of standing water: ________________.

Saturated soils: Yes X; No ____. Depth to saturated soil: 0.

Other indicators: ________________________________.

Wetland hydrology: Yes X; No ____. Basis: Water flowing and present on site

Atypical situation: Yes ____; No X.

Normal Circumstances? Yes X No ____.

Wetland Determination: Wetland ____________; Nonwetland non-wetland

Comments: Site is a partially vegetated stream channel w/seasonal flows
Site is water of the U.S.

Determined by: Mark A. [signature]

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name: Bevvgerssa Creek

Location:_____ Plot #: 2 Date: 1/025/05 Determined By:_____

VEGETATION LAYER

	TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1	Pepper			upL
2	Elder	Sambucus Cerulea		Fac ✓
3	Co Live Oak			upL
4	Cal Buckeye			Fac ✓
5	Baylaural	Umbellularia Californica		
6	Sycamore	Platanus Racemosa		Facw ✓
7				
8				
9				
10				

	HERBS	MIDPOINT OF % COVER CLASS	RANK
1	Vatch		Fac u
2	W Oat		upL
3	Geraneum		Facu
4	Curly Dock		Facw ✓
5	Mustard		upL
6	Oxalis		Fac ✓
7			
8			
9			
10			

5/13

	SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1	Birdfoot Sage			upL
2	Cactus-opuntia			upL
3				
4				
5				
6				
7				
8				
9				
10				

	WOODY VINES	NUMBER OF STEMS	RANK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Comment

16 pt. - Bankfull chan w

Gravel channel w/ HzD

no wetland soil

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: ~~B~~ BW-6 Section: _____

Transect 3

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1. Sycamore		7. Rip Gutt	
2. California Live Oak		8. Horhound	
3. Buckeye		9. Fennel	
Saplings/shrubs		Woody vines	
4.		10. Blackberry	
5.		11.	
6.		12.	

See Attached Data Form #2

% of species that are OBL, FACW, and/or FAC: 30%. Other indicators: _____.

Hydrophytic vegetation: Yes ___ No X. Basis: % of wetland species.

Soil stable Mg

Soil

Series and phase: Mocho Loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: _____.

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes ____ No X; Basis: _____.

Hydrology

Inundated: Yes X; No ____. Depth of standing water: 9"-12" .

Saturated soils: Yes X; No ____. Depth to saturated soil: 0 .

Other indicators: _____.

Wetland hydrology: Yes X; No ____. Basis: Water flowing and present on site

Atypical situation: Yes ___; No X.

Normal Circumstances? Yes X No ____.

Wetland Determination: Wetland _____; Nonwetland non-wetland

Comments: Site is a partially vegetated stream channel w/some wetland vegetation flows are seasonal. Site is a Water of the U.S. but not a wetland

Determined by: Mark A. Jennings

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name:_____

Location:_____ Plot #: 3 Date: 1/25/05 Determined By:_____

VEGETATION LAYER

	TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1	Sycamore			FACW ✓
2	Cal Co Live Oak			UPL
3	Buckley			UPL
4	Bay Laural			FAC ✓
5				
6				
7				
8				
9				
10				

	HERBS	MIDPOINT OF % COVER CLASS	RANK
1	Horhound		FAC ✓
2	Fennel		FACU
3	Mustard		UPL
4	W. Oats		UPL
5	Dandylion		FACU
6	Rip Gut		UPL
7	Granium		FACU
8			
9			
10			

	SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1	Pyracantha			—
2	Birds - sage			
3				
4				
5				
6				
7				
8				
9				
10				

4/13 — 30%

	WOODY VINES	NUMBER OF STEMS	RANK
1	Blackberry		FACW ✓
2			
3			
4			
5	Bankfull 6ft		
6	Cobble/gravel Buttom		
7	Riffle Pool		
8			
9			
10			

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: BW-6 Transect 4 Section: _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Cottonwood		7. Ripgut	
2. California Coast Live Oak		8. Carex	
3. Buckeye		9. elkman (Basin Wildrye)	
Saplings/shrubs		**Woody vines**	
4. —		10. —	
5.		11.	
6.		12.	

See Data Form 2

% of species that are OBL, FACW, and/or FAC: 33% Other indicators: _____.

Hydrophytic vegetation: Yes ____ No X. Basis: _____.

Soil

Soil Symbol MJ

Series and phase: Mocho Clay loam On hydric soils list? Yes ____; No Y.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: _____.

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes ____ No X; Basis: no indicators

Hydrology

Inundated: Yes X; No ____. Depth of standing water: 3"-6"

Saturated soils: Yes X; No ____. Depth to saturated soil: 0

Other indicators: _____.

Wetland hydrology: Yes X; No ____. Basis: Standing/flowing water on site

Atypical situation: Yes X; No ____. see additional data sheet

Normal Circumstances? Yes ____ No ____.

Wetland Determination: Wetland _____; Nonwetland non-wetland

Comments: Site located on a channelized section of stream (old) based on old topo maps and 1958 soils information However the site is a Water of the U.S.

Determined by: Mark A. Stanfield

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name: ____________ Application No.: ____________ Project Name: ____________

Location: ____________ Plot #: 4 Date: 1/25/05 Determined By: ____________

VEGETATION LAYER

TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1 Cotton Wood (Populus balsamifera)			Fac w ✓
2 Cal Coast Oak	>16"		upl
3 Buckeye			upl
4			
5			
6			
7			
8			
9			
10			

HERBS	MIDPOINT OF % COVER CLASS	RANK
1 geranium		Fac u
2 carix		FAC ✓
3 rip gut		upl
4 oxalis		FACu
5 elamus (basin wildrye)		NI
6 aster sp		? probably upl (based on location of plant)
7 curly dock		FAC w ✓
8		
9		
10		

SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1 —			
2			
3			
4			
5			
6			
7			
8			
9			
10			

WOODY VINES	NUMBER OF STEMS	RANK
1		
2	3/9	
3		
4		
5		
6		
7		
8		
9		
10		

Comments
chan. width 6-12 ft.
grav/cob
silt deposition (small)

DATA FORM 3

ATYPICAL SITUATIONS

Applicant Name: ______ Application Number: ______ Project Name: Berryessa Creek

Location: ______ Plot Number: 4 Date: 1/25/05

A. VEGETATION:

1. Type of Alteration: Area is regularly disced adjacent to stream channel, well above the ordinary high water mark.

2. Effect on Vegetation: Vegetation is mainly Ruderal annual grasses.

3. Previous Vegetation: ______
(Attach documentation) ______

4. Hydrophytic Vegetation? Yes ______ No X.

B. SOILS:

1. Type of Alteration: ______

2. Effect on Soils: ______

3. Previous Soils: ______
(Attach documentation) ______

4. Hydric Soils? Yes ______ No X.

C. HYDROLOGY:

1. Type of Alteration: Natural channel has been re-located to its present channel location.

2. Effect on Hydrology: site was previously w/in the historic floodplain however floodplain was not historically a wetland.

3. Previous Hydrology: upland
(Attach documentation) ______

4. Wetland Hydrology? Yes ✓ No ______.

new stream channel

Characterized By: [signature]

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: ~~E~~ BW-6 Transect 5 Section: _____

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		**Herbs**	
1. Cottonwood	Facw	7. Ripgut	upl
2. Buckeye	upl	8. wild oats	upl
3. California Live Oak (coastal)	upl	9. Oxalis	Facu
Saplings/shrubs		**Woody vines**	
4. —		10. —	
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 12% Other indicators: _____.

Hydrophytic vegetation: Yes ____ No X. Basis: _____.

Soil sample MJ

Soil

Series and phase: Mocho Clay loam On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: _____.

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes ____ No X; Basis: _____.

Hydrology

Inundated: Yes ____; No X. Depth of standing water: _____.

Saturated soils: Yes X; No ~~X~~. Depth to saturated soil: 0.

Other indicators: Soils damp within Channel.

Wetland hydrology: Yes X; No ____. Basis: _____.

Atypical situation: Yes X; No ____.

Normal Circumstances? Yes ____ No X.

Wetland Determination: Wetland _____; Nonwetland non-wetland.

Comments: Site is on a channelized section of Berryessa Creek Stream is a Water of the U.S. Stream is flashy evidence of recient flows include grassed bent over by flows, wrack line. Determined by: Mark Jennings B2

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name:_____

Location:_____ Plot #: 5 Date: 1/25/05 Determined By:_____

VEGETATION LAYER

	TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1	Buckeye			upl
2	Cottonwood			Facw
3	Cat Claw Oak			upl
4	Privit			?
5				
6				
7				
8				
9				
10				

	HERBS	MIDPOINT OF % COVER CLASS	RANK
1	oxalis		facu
2	carix		fac
3	fennel		facu
4	Rip gut		upl
5	wild oats		upl
6			
7			
8			
9			
10			

	SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1	privit			
2				
3				
4				
5				
6				
7				
8				
9				
10				

	WOODY VINES	NUMBER OF STEMS	RANK
1			
2			
3			
4			
5	gravel/sand bottom		
6	dry		
7	6-8 ft wide		
8	depth 9-12" with flow		
9			
10			

DATA FORM 3

ATYPICAL SITUATIONS

Applicant Name: _____ Application Number: _____ Project Name: Bevrgeesa Creek

Location: Santa Clara Plot Number: #5 Date: 1/25/05

A. VEGETATION:

1. Type of Alteration: Area is regularly disced adjacent to stream channel.

2. Effect on Vegetation: Vegetation is mainly Ruderal annual grasses

3. Previous Vegetation: _____

(Attach documentation) _____

4. Hydrophytic Vegetation? Yes _____ No X.

B. SOILS:

1. Type of Alteration: _____

2. Effect on Soils: _____

3. Previous Soils: _____

(Attach documentation) _____

4. Hydric Soils? Yes _____ No X.

C. HYDROLOGY:

1. Type of Alteration: natural channel has been filled and channel re-located to new location (present) soils are not hydroge

2. Effect on Hydrology: _____

3. Previous Hydrology: _____

(Attach documentation) _____

4. Wetland Hydrology? Yes X No _____.

Characterized By: [signature]

DATA FORM 1

WETLAND DETERMINATION

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

State: CA County: Santa Clara Legal Description: Township: ____ Range: ____

Date: 1/25/05 Plot No.: B W 6 Section: _____

Transect 6

Vegetation [list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)]. Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1. elderberry	FAC	7. wild oats	upl
2. California Coastal Live Oak	upl	8. mugwort	FacW (Artemisia douglasiana)
3.		9. american purple Vetch	FacU
Saplings/shrubs		Woody vines	
4.		10. Blackberry (H)	FACW
5.		11.	
6.		12.	

% of species that are OBL, FACW, and/or FAC: 37% Other indicators: _____.

Hydrophytic vegetation: Yes ____ No X. Basis: _____.

Soil

Soil grubbed CW

Series and phase: Clear Lake Clay On hydric soils list? Yes ____; No X.

Mottled: Yes ____; No X. Mottle color: _____; Matrix color: _____.

Gleyed: Yes ____ No X Other indicators: _____.

Hydric soils: Yes ____ No X; Basis: _____.

Hydrology

Inundated: Yes ____; No X. Depth of standing water: 0.

Saturated soils: Yes X; No ____. Depth to saturated soil: Surface.

Other indicators: high water mark / debris and grasses bent over

Wetland hydrology: Yes X; No ____. Basis: _____.

Atypical situation: Yes X; No ____.

Normal Circumstances? Yes ____ No X.

Wetland Determination: Wetland _____; Nonwetland nonwetland.

Comments: Water of the U.S.

Determined by: Mark Jolstad

DATA FORM 2

VEGETATION-COMPREHENSIVE DETERMINATION

Applicant Name:_____ Application No.:_____ Project Name:_____

Location:_____ Plot #: 16 Date: 1/25/05 Determined By:_____

VEGETATION LAYER

	TREES	BASAL AREA	TOTAL BASAL AREA	RANK
1	Cal Co. Oak			upl.
2	Elderberry			FAc ✓
3				
4				
5				
6				
7				
8				
9				
10				

	HERBS	MIDPOINT OF % COVER CLASS	RANK
1	Mustard		upl
2	Vetch (arm. purple)		Fac.u
3	Cal. Poppy		upl
4	W. oats		upl
5	mugwort		FACW ✓
6			
7			
8			
9			
10			

	SAPLINGS/SHRUBS	MIDPOINT OF HEIGHT CLASS	TOTAL HEIGHT CLASS	RANK
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

	WOODY VINES	NUMBER OF STEMS	RANK
1	Black Berry	FACW ✓	
2			
3			
4			3/8 .37
5			
6			
7			
8			
9			
10			

DATA FORM 3

ATYPICAL SITUATIONS

Applicant Name: _____ Application Number: _____ Project Name: Berryessa Creek

Location: Santa Clara Plot Number: 6 Date: 1/25/05

A. VEGETATION:

1. Type of Alteration: Area is regularly disced adjacent to stream Channel.

2. Effect on Vegetation: Vegetation is ruderal Annual grasses and invasive non-natives.

3. Previous Vegetation: _____
(Attach documentation) _____.

4. Hydrophytic Vegetation? Yes _____ No X.

B. SOILS:

1. Type of Alteration: _____.

2. Effect on Soils: _____.

3. Previous Soils: _____
(Attach documentation) _____.

4. Hydric Soils? Yes _____ No _____.

C. HYDROLOGY:

1. Type of Alteration: natural Channel has been filled and channel re-located to present location on upland soils.

2. Effect on Hydrology: Channel is incised / water continues to flow during storm events and continues.

3. Previous Hydrology: _____
(Attach documentation) _____.

4. Wetland Hydrology? Yes X No _____.

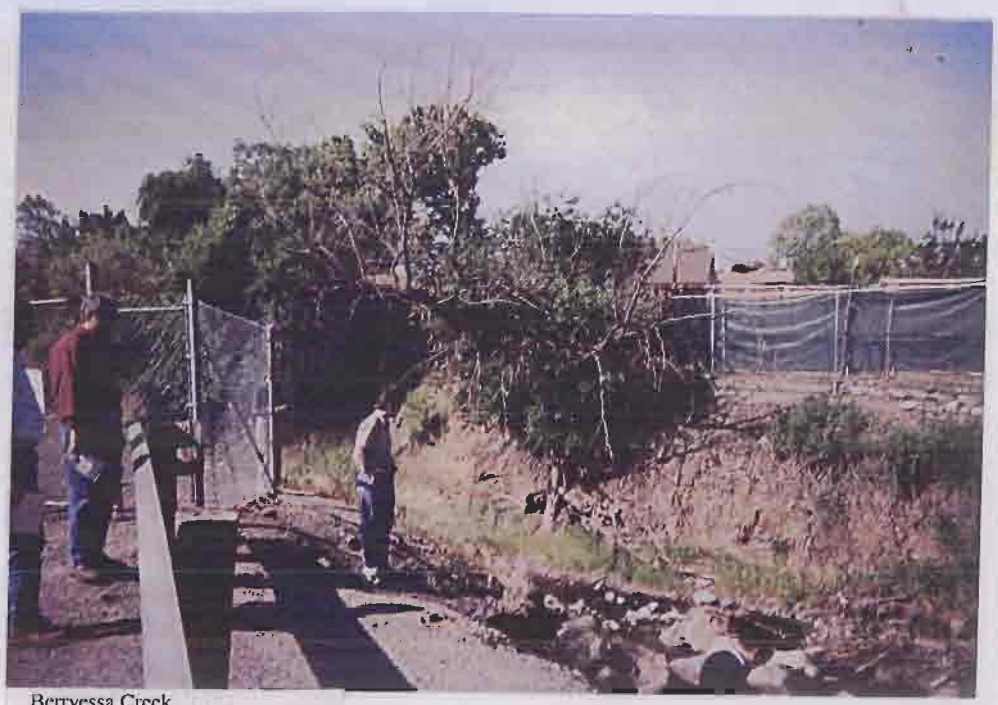
Characterized By: Mark Linfield

Appendix 4
Plant Species List

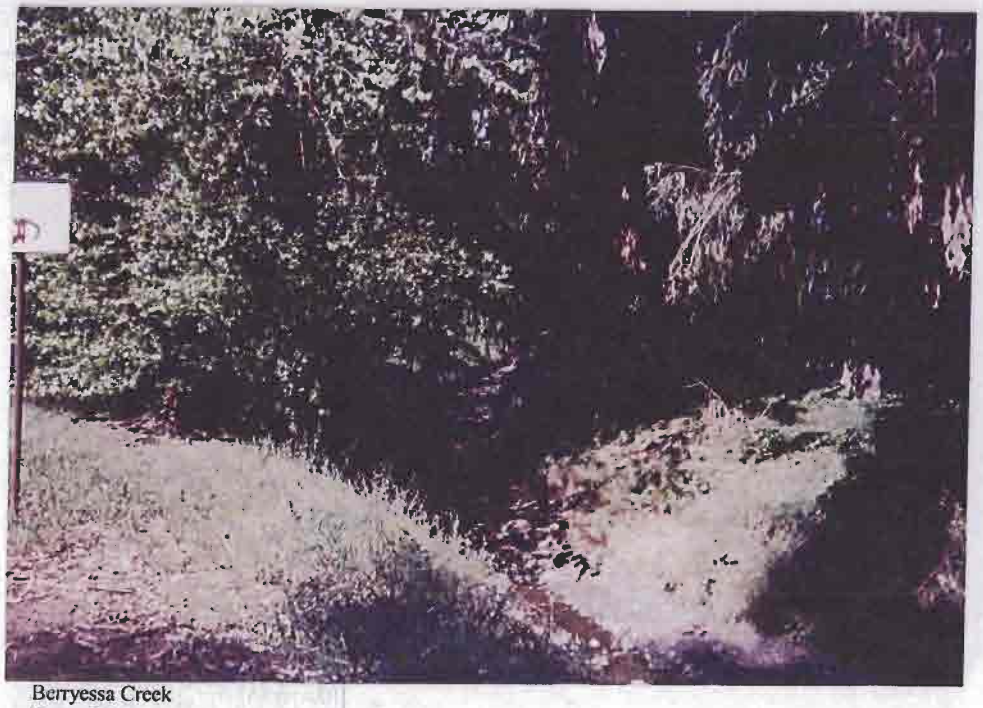
Artemisia californica
Artemisia douglasiana
Avena fatua
Aesculus californica
Baccharis pilularis
Bromis mollis
Bromis rubens
Carex spp.
Equisetum telmateia
Foeniculum vulgare
Galium aparine
Geranium dissectum
Geranium richardsonii
Hordeum jubatum
Hordiun hystrix
Hippuris vulgaris
Juncus xiphiodes
Lolium perenne
Marrubium vulgare
Oxalis corniculata
Platanus racemosa
Populus fremontii
Quercus agrifolia
Rumex crispus
Rorippa nasturtium-aquaticum
Salix lasiandra
Sanbucus cerulem
Sisymbrium altissimum
Typha latifolia
Umbellularia californica
Vicia americana

Appendix 5
Selected Site Photos

Structure at
Old Piedmont Rd.



Berryessa Creek
Old Piedmont Rd.



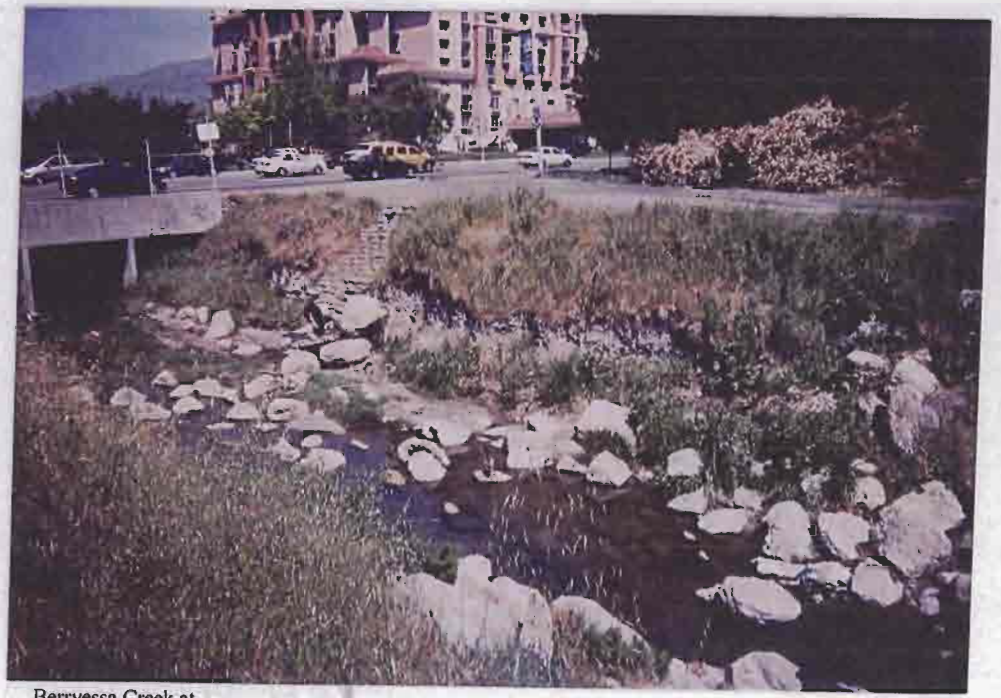
Berryessa Creek
Green Belt

Berryessa Creek
Upstream of Morrill Ave.

Berryessa Creek
Downstream of I-680

Berryessa Creek
at Yosemite Dr.

Berryessa Creek
at Yosemite Dr.

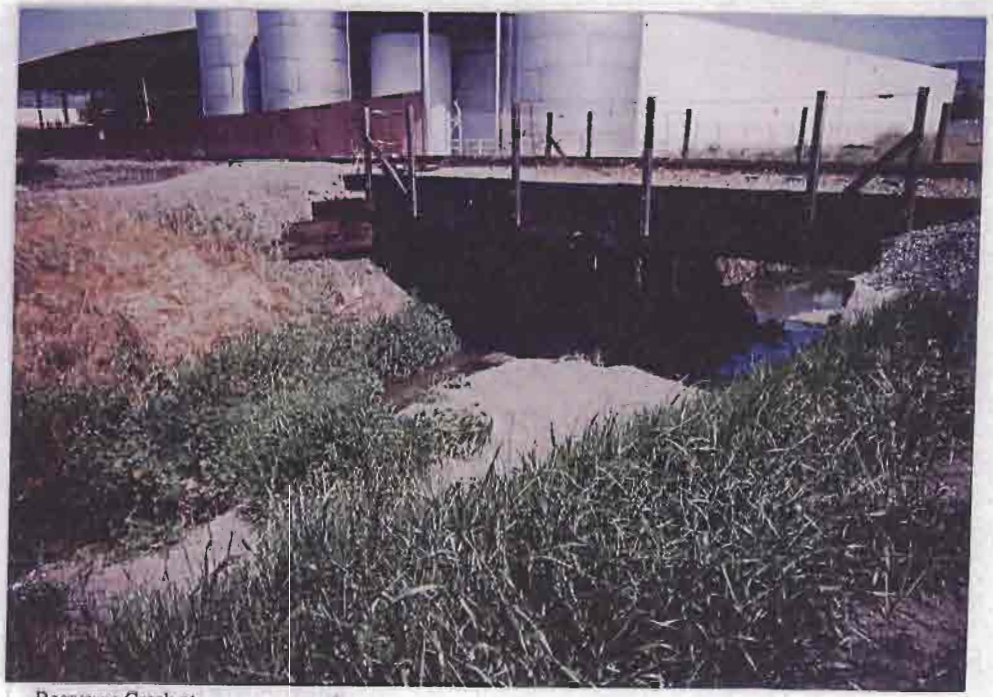


Berryessa Creek at
Ames Ave.

Berryessa Creek at
Los Coches

Berryessa Creek at
Los Coches

Berryessa Creek



Berryessa Creek at
RR Crossing